

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appellant(s) : Joachim HASCH et al.

Group Art Unit: 1794

Appln. No. : 10/521,151

Examiner: Thomas, A.

Filed : January 13, 2005

Confirmation No.: 9119

For : BUILDING BOARD

APPEAL BRIEF UNDER 37 C.F.R. §41.37

Commissioner for Patents
United States Patent and Trademark Office
Customer Service Window, Mail Stop Appeal Brief-Patents
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Sir:

This appeal is from the Examiner's rejection of claims 1, 2, 4, 7-10, 19, 22, and 23 as set forth in the Final Office Action dated April 7, 2009. A Notice of Appeal was timely submitted on May 28 2009. Accordingly, this Appeal Brief is being timely submitted by the initial due date of July 28 2008 (i.e., two months from the filing of the Notice of Appeal).

Payment of the appeal brief fee set forth in 37 C.F.R. §41.20(b)(1) was previously submitted with a first Appeal Brief on May 27, 2008. Prosecution was re-opened with an Office Action dated August 29, 2008, prior to a decision by the Board of Patent Appeal and Interferences.

The previously paid fee for the appeal brief should be applied to this Appeal Brief since a decision has not yet been rendered by the Board of Patent Appeal and Interferences (see MPEP §§ 1204.01 and 1207.04). Appellants only need to pay the difference between the current fee and the amount previously paid. Accordingly, the Commissioner is authorized to charge the

difference between the current fee for filing a notice of appeal and the amount previously paid in this application to Deposit Account No. 19-0089.

Please charge any additional fees necessary for consideration of the papers filed herein and refund excess payments to Deposit Account No. 19-0089.

(I) REAL PARTY IN INTEREST

The real party in interest is Kronotec AG of Luzern, Switzerland, as assignee of the entire interest in the above-identified application by an assignment recorded in the U.S. Patent and Trademark Office on June 2, 2005, at Reel 016639 and Frame 0460.

(II) RELATED APPEALS AND INTERFERENCES

The Appellants, their legal representatives and the Assignees are not currently aware of any appeals, interferences, or judicial proceedings that may directly affect or be directly affected by or have some bearing on the Board's decision in this appeal. Attached hereto is a Related Proceedings Appendix showing no related appeals or interferences.

(III) STATUS OF THE CLAIMS

In the Final Office Action dated April 7, 2009, claims 1, 2, 4 and 7-23 are pending in the application. Claims 11-18, 20, and 21 are withdrawn. Claims 1, 2, 4, 7-10, 19, 22, and 23 are rejected. Claims 3, 5, and 6 are canceled. No claims are allowed. Accordingly, claims 1, 2, 4, 7-10, 19, 22, and 23 are being appealed and are listed in the "Claims Appendix" attached herewith.

(IV) STATUS OF THE AMENDMENTS

All amendments have been entered. Accordingly, claims 1, 2, 4, 7-10, 19, 22, and 23 as presented in the Amendment Under 37 C.F.R. 1.111 on December 1, 2008, are being appealed, and are listed in the "Claims Appendix" attached herewith.

(V) SUMMARY OF THE CLAIMED SUBJECT MATTER**Independent Claim 1**

By way of non-limiting example, the invention provides for a building board for use as a ceiling or wall element in house building, the building board comprising a plurality of orientated strand boards (OSBs) (see, e.g., reference numerals 1, 2, 3, 1a, 2a, 3a, 1b, 2b, 3b in the Figure) which are disposed side by side and are bonded together in multiple layers (see, e.g., the figure and lines 17-18 of page 3). The building board further comprises some interspaces 4 filled with an insulating material 5 and other interspaces 4 devoid of the insulating material (see, e.g., the figure and line 23 of page 3 through line 1 of page 4). At least one nail plate 7 is disposed between respectively two layers (1a/2a/3a and 1b/2b/3b) lying one on top of the other (see, e.g., the figure and lines 5-6 of page 4). At least one plastic mat 6 is disposed between two layers (1a/2a/3a and 1b/2b/3b) lying one on top of the other (see, e.g., the figure and lines 2-3 of page 4).

(VI) GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 1, 2, 4, 7-10, 19, 22, and 23 are rejected under 35 U.S.C. §103(a) for being unpatentable over U.S. Pat. No. 5,098,762 ("Nakajima") in view of U.S. Pat. No. 6,696,167 ("Sean"), U.S. Pat. No. 4,661,398 ("Ellis"), and either of U.S. Pat. No. 4,486,115 ("Rionda") or European Pat. Appln. No. 0 481 941 ("EP 941").

(VII) ARGUMENTS

Claims 1, 2, 4, 7-10, 19, 22, and 23 are rejected under 35 U.S.C. §103(a) for being unpatentable over U.S. Pat. No. 5,098,762 ("Nakajima") in view of U.S. Pat. No. 6,696,167 ("Sean"), U.S. Pat. No. 4,661,398 ("Ellis"), and either of U.S. Pat. No. 4,486,115 ("Rionda") or European Pat. Appln. No. 0 481 941 ("EP 941").

Claims 1, 4, 19, and 22

The rejection of claims 1, 4, 19, and 22 under 35 U.S.C. §103(a) is in error, and the decision of the Examiner to reject these claims should be reversed.

To establish a *prima facie* case of obviousness, all claim limitations must be taught or suggested by the prior art. *See, In re Royka*, 490 F.2d 981, 985, 180 USPQ 580, 583 (CCPA 1974); *see also, In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). If the prior art reference(s) do not teach or suggest all of the claim limitations, Office personnel must explain why the differences between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art (MPEP 2141).¹

The present invention relates to a building board for use as a ceiling or wall element. Independent claim 1 recites, in pertinent part,

... a plurality of orientated strand boards (OSBs) which are disposed side by side and are bonded together in multiple layers ... at least one nail plate disposed between respectively two layers lying one on top of the other, and at least one plastic mat disposed between two layers lying one on top of the other.

Appellants respectfully submit that no proper combination of the applied references discloses or suggests the combination of features recited in the claimed invention. At page 2 of

¹ While the *KSR* court rejected a rigid application of the teaching, suggestion, or motivation ("TSM") test in an obviousness inquiry, the [Supreme] Court acknowledged the importance of identifying "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does" in an obviousness determination. *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356-1357 (Fed. Cir. 2007) (quoting *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1731 (2007)).

the Non-final Office Action dated January 5, 2009 ("Non-final Office Action")², the Examiner asserts that Nakajima discloses a plurality of boards 4 disposed side by side and bonded together to form multiple layers. The Examiner also contends that Sean teaches equivalence between wood and OSB boards at lines 16-20 of col. 1, and that it would have been obvious to use OSB boards in Nakajima in view of Sean (Non-final Office Action, page 2). Appellants respectfully disagree.

Nakajima discloses plywood composed of layers, each layer comprising a plurality of divided wood pieces 4. Nakajima repeatedly states that an object of the invention is to provide a smooth-surfaced plywood. For example, Nakajima states:

Preferably, the uppermost veneer layer comprises the plurality of divided wood pieces with the clearance formed between the divided wood pieces, and at least the uppermost layer has a filler filled in the clearance formed between the divided wood pieces thereof. The plywood can then be made smooth-surfaced. The smooth-surfaced plywood is very convenient for some uses.

(Nakajima, col. 1, lines 47-55) [emphasis added].

...

According to another preferred embodiment, at least the uppermost of the uppermost veneer layer and the lowermost veneer layer is an undivided layer, and the layer next to the undivided layer comprises the plurality of divided wood pieces with the clearance formed between the divided wood pieces, at least the next layer having a filler filled in the clearance. The undivided layer can then be adhered to the next layer with ease effectively and given a smooth surface finish.

(Nakajima, paragraph spanning cols. 1-2) [emphasis added].

Contrary to the Examiner's assertion, it would not have been obvious to modify Nakajima's wood pieces 4 with OSB. This is because OSB has a rough surface, such that the proposed modification would detract from Nakajima's stated object of having a smooth surface. According to MPEP 2143.01:

² The initial explanation of the rejection is set forth in the Non-final Office Action dated January 5, 2009 ("Non-final Office Action"). The Final Office Action dated April 7, 2009, appears to be the Examiner's response to arguments.

If a proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). See, MPEP 2143.01....

Appellants submit that the combination of Nakajima and Sean proposed by the Examiner would leave the Nakajima plywood with a rough surface (due to the OSB), thereby making the Nakajima system inoperable for its intended use (i.e., having a smooth surface). Therefore, one of ordinary skill in the art would not have been prompted to modify Nakajima by replacing the boards 4 with OSB.

At page 2 of the Final Office Action dated April 7, 2009 ("Final Office Action"), the Examiner states that the above argument is unconvincing because it "presumes that all OSB inherently has a rough surface and there is no disclosure to support such a statement." In response, Appellants submit that one of ordinary skill in the pertinent art would recognize that OSB has a relatively rough surface compared to other types of wood due to the manufacturing process for producing the OSB. Accordingly, Appellants submit that one of ordinary skill in the art would not have been prompted to modify Nakajima by replacing the boards 4 with OSB because such a modification would detract from Nakajima's stated object of having a smooth surface.

Moreover, Appellants submit that the rejection is improper because the Examiner has failed to identify a reason that would have prompted one of ordinary skill in the art to replace Nakajima's divided wood pieces with oriented strand board (OSB). While the *KSR* court rejected a rigid application of the teaching, suggestion, or motivation ("TSM") test in an obviousness inquiry, the Supreme Court acknowledged the importance of identifying "a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way

the claimed new invention does” in an obviousness determination. *Takeda Chemical Industries, Ltd. v. Alphapharm Pty., Ltd.*, 492 F.3d 1350, 1356-1357 (Fed. Cir. 2007) (quoting *KSR International Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1731 (2007)). In this case, instead of identifying any such reason, the Examiner merely asserts that Sean teaches the structural equivalence of wood and OSB boards, and concludes that the modification of Nakajima would have been obvious. Appellants submit that a generic teaching of equivalence does not constitute a reason that would have prompted one of ordinary skill in the art to replace Nakajima’s divided wood pieces with oriented strand board (OSB). Therefore, the rejection is improper and should be reversed.

At page 2 of the Final Office Action, the Examiner asserts that the above argument is not convincing because Sean discloses at lines 16-19 of col. 1 that OSB is “widely employed as substitutes for solid wood.” Appellants do not disagree that Sean makes this statement. However, Appellants submit that a mere teaching of using OSB as a substitution for solid wood, in general, does not establish a reason that would have prompted one of ordinary skill in the art to modify the particular apparatus of Nakajima. Put another way, the Examiner’s reliance on the general teaching of substitution in Sean ignores the context provided by Nakajima. That is, regardless of what Sean teaches, Nakajima clearly requires a smooth surfaced board which cannot be accomplished with OSB. Also, although Sean teaches OSB may be used as a substitution for solid wood, Sean does not anywhere teach a substitution of plywood with OSB. Therefore, Appellants maintain that the rejection fails to identify “a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does,” and that this renders the rejection unsustainable.

Furthermore, Appellants submit that Sean does not teach the equivalence of wood and OSB boards in plywood, such as the plywood disclosed by Nakajima. First, Sean teaches the substitution of solid wood with OSB. Second, the object of the Nakajima invention is plywood, e.g., as set forth in the title, the first independent claim, and at numerous instances throughout the specification. Moreover, Nakajima teaches that:

The main object of the present invention is to effectively utilize logs of small diameters, short lengths or low grades which have scarcely been used and to provide plywood which is adjustable in specific gravity and strength.

(Nakajima, col. 1, lines 22-27) [emphasis added].

Appellants submit that it simply would not make sense to utilize OSB in plywood, much less in plywood that is aimed at utilizing low grade materials. This is because OSB is expensive to manufacture compared to the wood pieces disclosed by Nakajima. Anyway, there is no teaching of substituting plywood with OSB. Therefore, one having ordinary skill in the art would not have been prompted to modify Nakajima by using OSB instead of the divided wood pieces, as suggested by the Examiner.

At page 2 of the Final Office Action, the Examiner explains that the above argument is “not convincing since there is nothing of record to support the allegations regarding cost of manufacture.” In response, Appellants submit that OSB by definition is a manufactured (i.e., engineered) wood product, and that this fact is well known and capable of instant demonstration. One of ordinary skill in the art would recognize that the manufacturing processes involved in fabricating OSB make OSB more expensive than the low grade materials explicitly disclosed by Nakajima. Moreover, Nakajima implies that avoiding high cost is a factor in the plywood industry at lines 17-19 of col. 1, where Nakajima states: “[I]ogs of small diameters are seldom used because use of such logs not only results in very low production efficiency and high cost

but also low qualities.” Therefore, Appellants maintain that it would not have been obvious to replace Nakajima’s wood pieces 4 with OSB because it simply does not make economic sense to use expensive OSB as the interior wood for a sheet of plywood.

Additionally, the Examiner impliedly acknowledges that neither Nakajima nor Sean discloses a *nail plate*. For example, Nakajima shows multiple boards bonded together to form layers, but does not disclose bonding with a nail plate. Sean does not disclose a plurality of boards bonded together in layers, and consequently does not disclose any structure for bonding layers together. The Examiner asserts at pages 2-3 of the Non-final Office Action that Rionda and EP 941 each disclose the use of nail plates to join together two layers of material by placing the nail plates between respective layers. Particularly, the Examiner identifies Figure 7 and lines 52-63 of Rionda, and the Figures and Abstract of EP 941. The Examiner concludes that it would have been obvious to use nail plates between the layers of Nakajima boards to provide a strong joint that is stable and resistant to shear forces (Non-final Office Action, page 3). Appellants disagree.

As discussed above, Nakajima discloses plywood. As is understood by one having ordinary skill in the art, plywood comprises pieces of wood that are glued together. For example, the online Merriam-Webster Online Dictionary defines plywood as:

a structural material consisting of sheets of wood glued or cemented together with the grains of adjacent layers arranged at right angles or at a wide angle.³

Moreover, the online American Heritage Dictionary defines plywood as:

³ <http://www.merriam-webster.com/dictionary/plywood>

A structural material made of layers of wood glued together, usually with the grains of adjoining layers at right angles to each other.⁴

Furthermore, the Ellis patent applied by the Examiner in this very rejection defines plywood as:

Plywood and panelling is manufactured by bonding together layers (plies) of thin sheets of wood (veneer). The layers are glued together with the grain direction of adjacent layers at right angles. The veneer is usually rotary-peeled from logs, but may also be sliced or sawn. After trimming, drying and grading, the veneers go to glue spreaders, where adhesive is applied and the plywood panel is laid up. The plywood is generally hot-pressed in large multiopening heated hydraulic presses. The application of both heat and pressure cures the glue.⁵

According to the above-noted definitions, the ordinary meaning of the term "plywood" includes layers of wood glued together. On the other hand, the Examiner's proposed modification would use a nail plate instead of glue to bond Nakajima's boards 4 together. However, if a nail plate were used to bond Nakajima's boards 4, then the resulting structure would not be plywood. As noted above, according to MPEP 2143.01, if the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The combination of Nakajima and Rionda or EP 941 proposed by the Examiner would change the Nakajima system from plywood to something other than plywood, thus changing the intended use and/or principle of operation of the Nakajima invention. Therefore, one having ordinary skill in the art would not have been prompted to modify Nakajima by using a nail plate to bond boards 4 together.

⁴ <http://www.bartleby.com/61/73/P0387300.html>

⁵ U.S. Pat. No. 4,661,398, lines 46-56 of col. 1 [emphasis added].

At pages 2-3 of the Final Office Action, the Examiner states that the above argument is not persuasive because the use of both adhesive and a nail plate in the Nakajima structure would not change the Nakajima structure to something other than plywood. The Examiner's explanation appears to impliedly acknowledge that the use of a nail plate alone, without any adhesive, would not fall within the definition of plywood. Therefore, it would not have been obvious to modify Nakajima by replacing the adhesive with a nail plate, because the resulting structure would no longer be plywood. Moreover, Appellants submit that, for the reasons discussed below, using both adhesive and a nail plate in the Nakajima board would add unnecessary and unwanted weight to the Nakajima board.

Moreover, Appellants submit that one of ordinary skill in the art would not have been motivated to use a nail plate with Nakajima because using a nail plate would add weight to the Nakajima board. This would be contrary to the purpose of Nakajima. Specifically, Nakajima discloses that the plywood of his invention is "convenient to transport and is usable for applications where lightweightness is desirable" (col. 1, lines 40-45) [emphasis added] and as a "base material for decorative uses" (col. 1, lines 40-45) [emphasis added].

Rionda, on the other hand, teaches the use of nail plates in a structural member, particularly for "[t]he joinder of structural load bearing wooden members" (col. 1, lines 5-10) [emphasis added]. Using a nail plate in Nakajima, as proposed by the Examiner, would add weight to the Nakajima board, thereby detracting from Nakajima's object of being lightweight. Moreover, using a nail plate designed for structural members with a lightweight, decorative (i.e., not structural) plywood would not have produced results that were predictable to one of ordinary skill in the art. Therefore, one having ordinary skill in the art would not have been prompted to modify Nakajima by using a nail plate to bond Nakajima's plywood boards together.

At page 3 of the Final Office Action, the Examiner states that the above argument is not convincing because Nakajima discloses that the main concern is the ability to use small logs to provide plywood that is adjustable in density and strength, and that the addition of a nail plate would have been obvious if additional strength requirements out-weighed low-weight requirements for a particular end use. Appellants disagree. Nakajima does not teach that high strength is an object, but rather merely that adjustable strength is an object (see lines 23-27 of col. 1). Moreover, Nakajima discloses techniques for adjusting the strength, none of which include adding a nail plate to plywood boards that are already adhered together as proposed by the Examiner. More specifically Nakajima states with respect to adjusting the strength:

The specific gravity and strength of the plywood are adjustable according to the contemplated use by varying the width of clearance, hence great convenience.

(col. 1, lines 44-46).

However if the specific gravity or strength of the plywood must be considered, the spacing between the wood pieces is so determined as to give the desired specific gravity or strength.

(col. 2, lines 48-51).

The piece of different material for filling the clearance between at least two divided wood pieces serves to give the plywood specific properties such as fireproofness, flame retardancy, improved strength, acoustic or sound insulating property, dimensional stability, resistance to warping or flexibility.

(col. 2, line 67 through col. 3, line 5).

To ensure the desired strength, the edge portions of the wood pieces 4 of the layer 1 are so positioned as to overlap the edge portions of those of the layer 3.

(col. 4, lines 7-10).

As such, Nakajima teaches that adjustable strength is a consideration, and discloses many ways to adjust the strength of the plywood. However, none of the techniques for adjusting the

strength of the plywood include adding a nail plate. This is because adding a nail plate to plywood in which the boards are already adhered together, as suggested by the Examiner would add weight to the plywood. This would go directly against Nakajima's explicit teaching of a desire for lightweightness, i.e., lines 43-44 of col. 1 where Nakajima states "lightweightness is desirable." Therefore, Appellants submit that one having ordinary skill in the art would not have been prompted to modify Nakajima by using a nail plate to bond Nakajima's plywood boards together.

Furthermore, Nakajima does not disclose or suggest *at least one plastic mat disposed between two layers lying one on top of the other*, as additionally recited in claim 1. The Examiner correctly notes, though, that Nakajima discloses the use of an interposed material, e.g., a non-woven fabric, between at least two of the layers (see, e.g., lines 1-18 of col. 3, and lines 39-43 of col. 4 of Nakajima). The Examiner asserts that Ellis discloses placement of fabric between layers of plywood and that the fabric may be a plastic fabric (Non-final Office Action, page 3). The Examiner concludes that it would have been obvious to use a plastic fabric as the fabric layer in Nakajima to improve the structural properties of the product (Non-final Office Action, page 3).

Appellants acknowledge that Ellis teaches that a coating-saturated fabric may be utilized between layers of plywood, and that the fabric may be polyester or fiberglass. Particularly, Ellis discloses a coating for use in plywood for improving the fire-resistance of the plywood. Ellis describes that the coating is designed to be used either as a substitute for currently used bonding glues (i.e., glues used for bonding plies of the plywood) or to be compatible with such glues (col. 6, lines 10-15). Ellis explicitly states that the coating serves "as an excellent adhesive between the wood plies" (col. 6, lines 39-40) and that the "coating alone can be used as the adhesive or

bonding agent, since it bonds tenaciously to the wood fibers” (col. 7, lines 3-5). Ellis teaches that the coating can be applied in the form of an impregnated fabric (col. 7, lines 23-24).

However, Appellants submit that it would not have been obvious to modify the Nakajima board to use Ellis’s coating-impregnated fabric and a nail plate, as suggested by the Examiner. More specifically, since Ellis teaches that the coating is such an effective bonding agent for plywood (i.e., the coating of Ellis is designed specifically to be a substitute for bonding glue or to be compatible with glue), it would not make sense to modify Nakajima’s board to include both Ellis’s coating-impregnated fabric and a nail plate, as proposed by the Examiner in the rejection of claim 1. This is because Ellis’s coating-impregnated fabric alone would serve to bond the plies of Nakajima’s board together, and there would be no reason to add the additional nail plate.

Moreover, the Examiner’s proposed use of both Ellis’s coating-impregnated fabric and a nail plate would unnecessarily add weight to the Nakajima board, which would detract from Nakajima’s stated objective of being lightweight (discussed *supra*). Thus, the combined teachings of the Nakajima and Ellis actually teach away from the Examiner’s proposed multiple modifications of the Nakajima board.

At page 3 of the Final Office Action, the Examiner states that the above argument is not persuasive because Ellis is being used merely to suggest the use of a plastic fabric. In response, Appellants submit that this amounts to picking-and-choosing isolated features of the prior art in an attempt to duplicate the claimed invention, which renders the rejection as unsustainable for being based on hindsight reasoning. More specifically, Ellis does not merely disclose a plastic mat between layers of wood. Instead, Ellis discloses that a coating-saturated fabric may be utilized between layers of plywood, that the fabric may be polyester or fiberglass, that the coating is useful for improving the fire-resistance of the plywood, and that the coating is

designed to be used either as a substitute for currently used bonding glues. Therefore, when the Ellis document is read and considered in its entirety, it would have at best prompted a skilled artisan to replace Nakajima's interposed fabric with Ellis's coating-saturated fabric. However, as discussed above, this would not have been obvious because this modification of Nakajima would be contrary to the stated objectives and teachings of Nakajima.

Appellants submit that for the above-discussed reasons, no proper combination of the applied art discloses or suggests the combination of features recited in claim 1. Claims 4, 19 and 22 depend from independent claim 1, and stand or fall together with claim 1.

Accordingly, Appellants respectfully request the rejection of claim 1, 4, 19, and 22 be reversed by the Board, and the application be remanded to the Examining Group for allowance.

Claim 2

The rejection of claim 2 under 35 U.S.C. §103(a) is in error, and the decision of the Examiner to reject this claim should be reversed.

Claim 2 depends from claim 1 and additionally recites *the layers of a plurality of boards are additionally connected to one another by mechanical connecting means*. For example, as described at lines 5-6 of page 7 of Appellants' specification, in addition to the nail plate, the individual layers can also be nailed, screwed, or clamped together. At pages 3-4 of the Non-final Office Action, the Examiner took official notice that it is well known to use mechanical means such as screws, nails, etc., to attach together layers of material. Appellants traversed the rejection and specifically traversed the taking of official notice at pages 14-16 of the Response dated February 26, 2009. Particularly, Appellants argued and maintain that the statement of official notice fails to address the recited combination of a nail plate and mechanical connecting means. Appellants submit that the applied art does not disclose or suggest *at least one nail plate*

disposed between respectively two layers lying one on top of the other and the layers of a plurality of boards are additionally connected to one another by mechanical connecting means.

For example, Nakajima does not disclose either a nail plate or other mechanical connecting means, much less a combination of both a nail plate and mechanical connecting means. Rionda, and EP 941, relied on the by the Examiner to teach a nail plate between layers, only disclose using a nail plate, and do not disclose an additional mechanical connecting means.

In fact, Rionda explicitly teaches away from using additional mechanical connecting means.

More specifically, Rionda states:

The joinder of structural load bearing wooden members has been significantly advanced by the advent of structural wooden joints which are connected solely by means of metal plates having nail-like teeth struck therefrom and embedded into the wooden members, such as illustrated in Jureit U.S. Pat. No. 2,877,520. Plates of this type wherein the teeth serve as the only means holding the plates onto the wooden members and the wooden members in adjoining relation have proved eminently successful particularly in the building industry. Various arrangements and configurations of teeth in the plates have been proposed and constructed in the past for specific purposes and to solve particular problems associated with utilization of connector plates of this type.

(Rionda, col. 1, lines 10-24) [emphasis added].

Thus, not only do the references fail to disclose or suggest an additional mechanical connecting means, Rionda actually teaches away from the recited combination. In this case, looking at Rionda in its entirety, it would clearly teach away from using an additional mechanical connecting means.

At page 4 of the Final Office Action, the Examiner asserts that the above arguments are not convincing because the above-identified passage of Rionda is directed to the background art and not the disclosed invention. In response, Appellants note that MPEP 2141.02 requires that a prior art reference must be considered as a whole, including portions that would lead away from the claimed invention. More specifically, MPEP 2141.02 states:

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)....

Appellants submit that the Examiner is not free to disregard the above-noted passage of Rionda merely because it is located in a particular section of the document. Instead, the Examiner is required to consider the entirety of the teachings of Rionda. As argued above, Appellants submit that Rionda teaches away from using a nail plate and an additional mechanical connecting means. Accordingly, Appellants submit that no *proper* combination of the applied art discloses or suggests the combination of features recited in claim 2.

In response to Appellants traversal of the taking of official notice, the Examiner asserts that the use of multiple types of well-known fasteners, such as nails and nail plates, would clearly be obvious, and that U.S. Pat. no. 2,249,590 ("Allen") is cited to show that it is well known in the laminate arts to use mechanical means such as nails to attach together layers of material (Final Office Action, pages 3-4). However, Allen does not teach the use of a nail plate and another type of fastener. Instead, Allen only shows the use of nails. Therefore, none of the applied references discloses the use of a nail plate and another mechanical coupling means. Therefore, no proper combination of the applied art discloses or suggest the combination of features recited in claim 2, i.e., at least one nail plate disposed between respectively two layers lying one on top of the other and the layers of a plurality of boards are additionally connected to one another by mechanical connecting means.

Accordingly, Appellants respectfully request the rejection of claim 2 be reversed by the Board, and the application be remanded to the Examining Group for allowance.

Claim 8

The rejection of claim 8 under 35 U.S.C. §103(a) is in error, and the decision of the Examiner to reject this claim should be reversed.

Claim 8 depends indirectly from claim 2 and additionally recites *the plurality of OSBs have a thickness of 100 mm to 250 mm, the plurality of OSBs have a length of 4 m to 6 m, and the interspaces are about 20 mm wide*. Appellants submit that the base reference (i.e., Nakajima) fails to disclose the following features that are present in claim 8: (i) oriented strand board; (ii) a nail plate; (iii) a plastic mat; (iv) mechanical connecting means; (v) the plurality of OSBs have a thickness of 100 mm to 250 mm; (vi) the plurality of OSBs have a length of 4 m to 6 m (vii) and, the interspaces are about 20 mm wide.

To arrive at the combination of features recited in claim 8, Nakajima would have to be modified in at least seven different ways. Appellants submit that such extensive modification of Nakajima would not have been obvious at least for the reasons discussed *supra*. Appellants further submit that a seven-way modification of Nakajima in view of Sean, Ellis, Rionda, EP 941, design choice, and official notice would necessarily be an example of blueprinting based on an improper use of hindsight reconstruction.

The Court of Appeals for the Federal Circuit has repeatedly cautioned against employing hindsight by using a patent applicant's disclosure as a blueprint to reconstruct the claimed invention from the isolated teachings of the prior art. *See, e.g., Grain Processing Corp. v. American Maize-Prods. Co.*, 840 F.2d 902, 907, 5 USPQ2d 1788, 1792 (Fed. Cir. 1988). Moreover, it is established law that one "cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *Ecolchem, Inc.*

v. Southern Calif. Edison Co., 227 F.3d 1361 (Fed. Cir. 2000), (citing *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ2d 1780, 1783 (Fed. Cir. 1988)).

At page 4 of the Final Office Action, the Examiner argues that reliance of a large number of references, without more, does not weigh against the obviousness of the claimed invention. Appellants are not arguing that the number of references is dispositive. Rather, Appellants submit that the Examiner the number of modifications proposed by the Examiner, even in light of the prior art teaching away from the proposed combinations, evidences a clear use of hindsight reasoning. For example, some of the recited features are not found anywhere in the applied art, but rather, are only found in Appellants' own disclosure. Others of the recited features are arguably found in different ones of the references, but the references themselves teach away from the combination of the elements in the manner recited in the claimed invention. Notwithstanding these infirmities, the Examiner asserts that an extensive modification of the Nakajima board would have been obvious to one of ordinary skill in the art at the time the invention was made. Appellants disagree and submit that, for the reasons discussed herein, the Examiner is resorting to "blueprinting" by picking and choosing features out of the prior art and out of Appellants' disclosure. This "blueprinting" renders the rejection unsustainable as being based on hindsight reasoning.

Moreover, Appellants submit that it would not have been obvious to modify the divided wood pieces of Nakajima to be of the dimensions recited in claim 8 because Nakajima expressly states that the object of his invention is to use wood pieces that are prepared from logs of small diameter and short length (col. 1, lines 23-25; col. 1, lines 34-35; col. 2, lines 29-31). Nakajima teaches specific dimensions for the wood pieces, which dimensions do not fall within the recited ranges (i.e., the plurality of OSBs have a thickness of 100 mm to 250 mm, the plurality of OSBs

have a length of 4 m to 6 m, and the interspaces are about 20 mm wide, as recited in claim 8). Moreover, making Nakajima's divided wood pieces larger would add weight to the plywood, which would detract from Nakajima's stated objective of lightweightness (discussed *supra*). For all of these reasons, Appellants submit that it would not have been obvious to modify Nakajima's wood pieces to be of the size recited in claim 8.

Accordingly, Appellants respectfully request the rejection of claim 8 be reversed by the Board, and the application be remanded to the Examining Group for allowance.

Claims 7, 9, and 10

The rejection of claims 7, 9, and 10 under 35 U.S.C. §103(a) is in error, and the decision of the Examiner to reject this claim should be reversed.

Claim 7 depends from allowable claim 1, and additionally recites *the plurality of OSBs have a length of 2-20 m*. Claim 9 depends from claim 7, and additionally recites *the plurality of OSBs have a length of one of 2-10 m or 4-6 m*. Claim 10 depends from claim 7, and additionally recites *the plurality of OSBs have a thickness of one of 100-400 mm or 100-250 mm*. The Examiner does not identify these features in any applied reference, but rather concludes that it would have been obvious to make the product of the primary reference using boards of any size since a change in size is generally recognized as being within the level of ordinary skill in the art (Non-final Office Action, page 4).

Appellants disagree and submit that the explanation of the rejection is insufficient to establish a *prima facie* case of obviousness because it is not factually supported and because it is conclusory. It is well established that the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness (MPEP §2142). Rejections based on §103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of

the invention from the prior art. The Office may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. *See, In re Warner*, 379 F.2d 1011, 1017, 154 USPQ 173, 177 (CCPA 1967), *cert. denied*, 389 U.S. 1057 (1968). Moreover, as mandated by the Supreme Court and subsequently adopted in MPEP 2142, conclusory rejections are improper:

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396 (2007) noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Federal Circuit has stated that "rejections on obviousness cannot be sustained with mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006). See also *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396 (quoting Federal Circuit statement with approval).

In this rejection, the Examiner does not provide any basis in fact or articulated reasoning to support the conclusion that it would have been obvious to modify Nakajima's boards to be of the sizes recited in claims 7, 9, and 10, or that that one of ordinary skill in the art would have recognized that the results of such a modification were predictable. Instead, the Examiner merely concludes that it would have been obvious. This type of factually unsupported and conclusory rejection is clearly improper in light of *KSR*.

Accordingly, Appellants respectfully request the rejection of claims 7, 9, and 10 be reversed by the Board, and the application be remanded to the Examining Group for allowance.

Claim 23

The rejection of claim 23 under 35 U.S.C. §103(a) is in error, and the decision of the Examiner to reject this claim should be reversed.

Claim 23 depends from claim 22, which depends from independent claim 1, and additionally recites:

... wherein the at least one plastic mat is structured and arranged to increase the sound-insulation and heat insulation of the building board,
wherein the at least one plastic mat is disposed between the outermost layer and the second layer, and
the at least one nail plate is disposed between the second layer and a third layer of the plurality of orientated strand boards.

As discussed above with respect to claim 1, none of the applied references teaches or suggests a nail plate between two layers of boards lying one on top of the other. Moreover, as discussed above with respect to claim 1, none of the applied references discloses or suggests a plastic mat disposed between two layers lying one on top of the other.

Furthermore, even if the applied art can be construed as teaching a nail plate between two layers of boards lying one on top of the other and a plastic mat disposed between layers of boards, Appellants submit that the applied art does not teach a plastic mat and a nail plate disposed between the specific layers recited in claim 23. That is, there is no teaching in the applied art of a plastic mat between *the outermost layer* and *the second layer*, and a nail plate between *the second layer* and *a third layer*.

Accordingly, Appellants respectfully request the rejection of claim 23 be reversed by the Board, and the application be remanded to the Examining Group for allowance.

Conclusion

In view of the foregoing remarks, Appellants submit that claims 1, 2, 4, 7-10, 19, 22, and 23 are patentably distinct from the prior art of record and are in condition for allowance.

Accordingly, Appellants respectfully request that the Board reverse the Examiner's rejection of claims 1, 2, 4, 7-10, 19, 22, and 23, and remand the application to the Examiner for allowance of the pending claims.

Respectfully submitted,
Joachim HASCH et al.

A handwritten signature in black ink, appearing to read 'Andrew M. Calderon', is written over a horizontal line.

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(VIII) CLAIMS APPENDIX

The following is a listing of the claims involved in the appeal.

1. A building board for use as a ceiling or wall element in house building, comprising a plurality of orientated strand boards (OSBs) which are disposed side by side and are bonded together in multiple layers, further comprising some interspaces filled with an insulating material and other interspaces devoid of the insulating material, at least one nail plate disposed between respectively two layers lying one on top of the other, and at least one plastic mat disposed between two layers lying one on top of the other.

2. The building board as claimed in claim 1, wherein the layers of a plurality of boards are additionally connected to one another by mechanical connecting means.

4. The building board as claimed in claim 2, wherein the at least one plastic mat is structured and arranged to increase the sound-insulation and heat insulation of the building board.

7. The building board as claimed in claim 1 wherein the plurality of OSBs have a length of 2-20 m.

8. The building board as claimed in claim 4, wherein:
the plurality of OSBs have a thickness of 100 mm to 250 mm,
the plurality of OSBs have a length of 4 m to 6 m, and

the interspaces are about 20 mm wide.

9. The building board as claimed in claim 7, wherein the plurality of OSBs have a length of one of 2-10 m or 4-6 m.

10. The building board as claimed in claim 7, wherein the plurality of OSBs have a thickness of one of 100-400 mm or 100-250 mm.

19. The building board of claim 1, wherein:

the some interspaces filled with an insulating material are provided in a first layer of the plurality of boards, and

the other interspaces devoid of the insulating material are provided in a second layer of the plurality of boards.

22. The building board as claimed in claim 1, wherein:

the interspaces filled with insulating material are disposed in an outermost layer of the plurality of orientated strand boards, and

the interspaces devoid of insulating material are disposed in a second layer adjacent the outermost layer.

23. The building board as claimed in claim 22, wherein the at least one plastic mat is structured and arranged to increase the sound-insulation and heat insulation of the building board,

wherein the at least one plastic mat is disposed between the outermost layer and the second layer, and

the at least one nail plate is disposed between the second layer and a third layer of the plurality of orientated strand boards.

(IX) EVIDENCE APPENDIX

NONE.

(X) RELATED PROCEEDINGS APPENDIX

NONE.